

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0125253  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATES OF DECOMPN. IN WATER OF  
1, (METHYLAMINO), 2, METHYL, 2, NITROPROPANE,  
1, (DIMETHYLAMINO), 2, METHYL, 2, NITROPROPANE,  
1, (DIETHYLAMINO), 2, METHYL, 2, NITROPROPANE,  
1, (DIPROPYLAMINO), 2, METHYL, 2, NITROPROPANE,  
1, (DIISOPROPYLAMINO), 2, METHYL, 2, NITROPROPANE,  
1, (DIETHYLAMINO), 2, 2, 2, DINITROPROPANE,  
1, (DIMETHYLAMINO), 2, ETHYL, 2, NITROBUTANE,  
1, (DIETHYLAMINO), 2, ETHYL, 2, NITROBUTANE,  
PIPERIDINO, 2, METHYL, 2, NITROPROPANE AT DIFFERENT PH AND TEMPS. THE  
PROPOSED REACTION MECHANISM INVOLVES UNIMOL. DISSOCN. OF AN UNPROTONATED  
BASE AS THE RATE DETG. STEP WITH FORMATION OF IMMONIUM IONS AND  
CARBANIONS. THE DISSOCN. RATES ARE GREATLY INFLUENCED BY THE SIZE BOTH  
OF THE ALKYL SUBSTITUENTS AT THE AMINE N AND OF THE LEAVING GROUP. AN  
EXCELLENT CORRELATION IS OBSERVED BETWEEN THESE RATES AND THE HYDROLYSIS  
RATES OF 3,3,SUBSTITUTED MONO,P,BROMOPHENYL GLUTARATE ESTERS. THIS  
FACT INDICATES THAT ALKYL GROUPS EXERT A PREDOMINANTLY STERIC EFFECT ON  
THE REACTION VELOCITY. POSSIBLE MECHANISMS ARE DISCUSSED.  
FACILITY: INST. ORG. ELEM. COMPD., MOSCOW, USSR.

UNCLASSIFIED

MARTINO, A. A.

50: JPRS 54539

23 Nov 71

UDC: 616.394616.342]-001.44-07:616.36-07

THE SIGNIFICANCE OF FUNCTIONAL AND HISTOCHEMICAL EXAMINATION OF THE LIVER  
IN EVALUATING ITS CONDITION IN THE PRESENCE OF PEPTIC ULCER

(Article by N.V. Zhuravleva, A.S. ~~Perelomov~~, A.A. Martino, Institute of Human  
Morphology, USSR Academy of Medical Sciences, Moscow, and Second Moscow  
Medical Institute named N.I. Pirogov, Moscow, Vsesoyuznaya Akademiya Meditsinskikh  
Nauk SSSR, No 10, 1971, pp 67-70)

Many clinicians are concerned with the condition of the liver in the  
presence of peptic ulcers.

This is justified by the anatomical and physiological similarity  
between the stomach and the liver, their common vascular supply and  
innervation. Indeed, biochemical and functional studies of the liver  
(M.M. Shvart, I.A. Alekseyenko and A.H. Baskayeva; A.I. Vennar; K.M.  
Solodov; Picco and Fernando; Halle et al.) indicate that it does  
change. However, the degree of involvement of the liver in the  
presence of peptic ulcer has not been investigated sufficiently.  
In spite of the special studies pursued in this direction, the  
shifts in biochemical analyses of such patients are inconsistent  
(N.I. Lapidus).

Works dealing with the morphology of the liver with chronic  
gastric and peptic ulcer are few in number, they involve few  
case histories and, in essence, do not make use of histochemical  
methods (Z.A. Bondar' et al.; O.Ya. Kartashova et al.; G.A. Rukhovich;  
Ye.K. Petrovich; L.I. Arkin et al.). In the last few years histo-  
chemical investigation is gaining increasing importance in the study  
of the pathomorphology of various diseases. The histochemical method  
holds some promise with regard to investigation of the functional  
state of organs and systems on the cellular level; it permits  
demonstration of their participation in intermediate [interstitial]  
metabolism.

In order to determine the correlation between functional and mor-  
phological changes in the liver associated with peptic ulcer and the  
localization, duration, and intensity of the process and nature of  
complications, we conducted a complex clinico-morphological survey of  
patients with peptic ulcers using histochemical methods. In all

MEDICINE

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UDC 629.78.015.076.8

IVANOV, N. M., MARTINOV, A. I.

"Concerning the Maximum Permissible Load Upon the Frontal Surface of Spacecraft Making an Aeronautic Descent in the Atmosphere of Mars"

Uch. Zap. Tsentr. Aero-Gidrodinamich. In-ta (Scientific Notes of the Central Aerohydrodynamic Institute), Vol 2, No 3, 1971, pp 105-109 (from Referativnyy Zhurnal, Raketostroyeniye, No 12, Dec 71, Abstract No 12,41.138)

Translation: The article deals with some questions of the aerodynamic descent of a spacecraft in the rarified atmosphere of Mars. It is shown that such a landing method for spacecraft, at least with an average value of the reduced load upon the phase  $P_{x \text{ max term}} \approx 250$  to  $350 \text{ kg force/m}^2$ , is possible in practice only when two basic conditions are satisfied: on board the spacecraft there are autonomous navigation facilities; the landing spacecraft possesses at least a small lift force (a fineness of  $K \approx 0.3$  to  $0.4$ ). 5 figures. 6 references.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PURIFICATION OF POLYMERIC MATERIALS -U-  
AUTHOR-(04)-TIME, A.V., USHAKOV, V.G., MARTINOVSKIY, G.A., PAPKO, V.V.  
COUNTRY OF INFO--USSR  
SOURCE--USSR 264,690  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--03MAR70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--SYNTHETIC RUBBER, CHEMICAL PURIFICATION, CHEMICAL PATENT,  
EMULSION, ELECTRIC FIELD  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1469 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0128868  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128868

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYMERIC MATERIALS, E. G. SYNTHETIC RUBBERS, ARE PURIFIED FROM ZIEGLER Natta CATALYST RESIDUES BY TREATING THE HYDROCARBON SOLNS. OF POLYMERS WITH H SUB2 O, WITH THEIR SUBSEQUENT REMOVAL FROM THE FORMED H SUB2 O HYDROCARBON EMULSION. THE EMULSION IS ACTED UPON BY AN ELEC. FIELD OF INDUSTRIAL FREQUENCY AND HIGH VOLTAGE.

UNCLASSIFIED

USSR

BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., DZHELEPOV, V. P.,  
KLDNITSKIY, V. S., KUTSIDI, N. K., Tbilisi State University, LOMAKIN, YU. F.,  
MAKSHENKO, V. A., MARTINSKA, G., FLYAGIN, V. B., KHARZHEYEV, YU. N., and  
SHANDOR, L.

"Possible Existence of  $\pi^- \delta^+$ -Resonance With a Mass of 270 MeV"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13,  
No 12, 20 Jun 71, pp 665-668

Abstract: The preliminary results of this experiment were presented in 1970 at the Fifteenth International Conference on High-Energy Physics in Kiev. The authors find experimental signs of the possible existence of a new meson resonance. They observe a narrow peak when  $M = 270$  MeV in the spectrum of effective masses of the system  $\pi^- \delta^+$ , which forms in the reaction  $\pi^- p \rightarrow \pi^- p + (2.3)\delta^+$  at 5 GeV/c. The authors study events of the type  $\pi^- p \rightarrow \pi^- p + (2.3)\delta^+$  which satisfy the following conditions: (1) the protons are identified by ionization and stopping in the camera, and the impulses of the protons do not exceed 900 MeV/c; (2) the length of the tracks of secondary charged particles from the star is no less than 2 cm, and the impulses of these particles are measured with an accuracy of  $1/2$ .

USSR

BUDAGOV, YU. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 12, 20 Jun 71, pp 665-668

accuracy no worse than 30%; (3) the  $\delta$ -quanta have impulses greater than 30 MeV/c, measured with an accuracy no worse than 25%; (4) the scattering angles between the two  $\delta$ -quanta do not exceed  $2^\circ$ . As a result of the experiment, the authors find that the effect which they observed is caused by the existence of a new meson resonance. The figures depict the distribution by effective mass of quanta. The article contains 2 figures and a bibliography of 7 entries.

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2 015 UNCLASSIFIED PROCESSING DATE--160170  
LE--MEASUREMENT OF TOTAL AND PARTIAL CROSS SECTIONS OF THE 5.1 GEV-C PI  
PRIE NEGATIVE MESON INTERACTION IN A PROPANE BUBBLE CHAMBER -U-  
HOR-(05)-BUDAGOV, YU.A., VINOGRADOV, V.B., VOLODKO, A.G., OZHELEPOV,  
D.P., MARTINSKA, G.  
UNTRY OF INFO--USSR

URCE--YAD. FIZ. 1970, 11(2), 395-8

TE PUBLISHED-----70

BJECT AREAS--PHYSICS

PIC TAGS--MESON INTERACTION, PION, PROTON, NEUTRON, CARBON, BUBBLE  
CHAMBER, PROPANE, INTEGRAL CROSS SECTION

NTROL MARKING--NO RESTRICTIONS

UMENT CLASS--UNCLASSIFIED  
OXY REEL/FRAE--1991/1033

STEP NO--UR/0367/70/011/002/0395/0398

RC ACCESSION NO--AP0110723

UNCLASSIFIED



72 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

RC ACCESSION NO--AP0110723

STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOTAL CROSS SECTION OF THE 5.1  
GEV-C PI PRIME NEGATIVE MESON INTERACTION WAS MEASURED IN A C SUB3 H  
SUB8 BUBBLE CHAMBER. YIELDS OF REACTIONS WITH DIFFERENT MULTIPLICITIES  
OF CHARGED PARTICLES WERE DETD. FOR THE INTERACTION OF PI PRIME NEGATIVE  
MESONS WITH P, N, AND C ATOMS, AND THE CROSS SECTIONS FOR GENERATIONS OF  
0-10 PRONG EVENTS IN COLLISIONS WITH P WERE OBTAINED. FACILITY:  
OB'EDIN, INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED

USSR

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BUDAGOV, YU. A., VINOGRADOV, V. B., VOLOD'KO, A. G., ~~DZHELEPOV, V. P.~~ KIRILLOV-UGRYUMOV, V. G., Kladnitskiy, V. S., KUZNETSOV, A. A., LOMAXIN, YU. F., MEL'NIKOVA, N. N., PONOSOV, A. K., FLYAGIN, V. B., SHLYAPNIKOV, P. V., MARTINSKA, G. (1), BOLDEA, V. (2), MIKHUL, A. (2), MUMUYANU, D. (2), PONTA, T. (2), PELEA, S. (2), and CHADRAA, B. (3), Joint Institute of Nuclear Research; (1) University imeni P. I. Shafarik, Koshitse, Czechoslovak SSR; (2) Institute of Atomic Physics, Bucharest, Romania; (3) Physics Institute of the Academy of Sciences Mongolian People's Republic, Ulan-Bator

"Study of the Mass Spectrum of a AK-System in  $\pi$ -p-Interactions at 4 and 5.1 GeV/c"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 31-35

Abstract: The results of a study of the spectrum of the effective masses of a AK-system are reported. The spectrum was obtained in investigating  $\pi$  p-interactions in a 24-liter and a 1-meter propane bubble chamber irradiated in  $\pi$ -meson beams of the proton synchrotron of the Joint Institute of Nuclear Research with pulses of 4 and 5.1 GeV/c, respectively. An investigation of the structure of the effective mass spectrum of a AK-system was of interest from the viewpoint of observing new

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BUDAGOV, YU. A., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 11, No. 1, 5 Jan 70, pp 31-35

resonances with zero strangeness and the decays of different isobars via the channel  $N^* \rightarrow \Lambda + K$ , to determine the relative probabilities of these decays. Approximately 230,000 photographs were analyzed for each bubble chamber. The effective mass spectra of  $\Lambda K^0$  combinations for events in which the decays of a  $\Lambda$ -hyperon and a  $K^0$ -meson were simultaneously recorded in the chamber are graphed. The graphs show a considerable excess in the number of events above the background in the mass region 1.61-1.96 GeV/c<sup>2</sup>. It is shown that this anomaly is not associated with the reflection of known resonances  $Y^*$  (1385) and  $K^*$  (890) in the  $\Lambda K^0$ -spectrum. The total excess in the number of events over the background in the mass interval 1.61-1.96 GeV/c<sup>2</sup> was  $114 \pm 13$ . The experimental data verify the existence of two resonances with masses about 1685 and 1935 MeV/c<sup>2</sup> and widths of the order of 150 MeV/c<sup>2</sup>. It is concluded that the anomaly observed in the effective mass spectrum of  $\Lambda K$  can be explained only by the decay of the isobar  $S_{11}$  (1710),  $P_{11}$  (1750) via the channel  $N^* \rightarrow \Lambda + K$  or by the existence of a new resonance with mass about 1685 MeV/c<sup>2</sup>, as the data of R. Erbe et al indicate.

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--USE OF COMPLEXES OF CYCLOPENTADIENYL TITANIUM COMPOUNDS AS  
POLYMERIZATION CATALYSTS. 5. POSSIBLE SYNTHESIS OF ETHYLENE COPOLYMERS  
AUTHOR--(03)-KONGAS, A., KOGERMAN, A., MARTINSON, H.

COUNTRY OF INFO--USSR

SOURCE--FESTI NSV TEAD. AKAD. TION., KEEM., GEOL. 1970, 1911), 90-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM COMPOUND, COMPLEX COMPOUND, CYCLIC GROUP,  
POLYMERIZATION CATALYST, ETHYLENE, COPOLYMER, ORGANICAL ALUMINUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1089

STEP NO--UR/0470/70/0117/001/0090/0092

CIRC ACCESSION NO--AP0134778

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70  
 CIRC ACCESSION NO--AP0134778  
 ABSTRACT/EXTRACT--(U) GP--C- ABSTRACT. THE COPOLYMER OF ETHYLENE (I) WITH  
 H SUB2 C:CHED SUB2 ME (II) OVER RTIOCL, ET SUB3 AL IR IS  
 CYCLOPENTADIENYL) OR OVER RTIOCL, ISO, BU SUB2 ALCL COMPLEX CATALYSTS GAVE  
 I-II COPOLYMERS. THE COPOLYMER OF I WITH PICH:CH SUB2 (III) OVER R SUB2  
 TICL SUB2 ISO, BU SUB2 ALCL OR RTIOCL, ISO, BU SUB2 ALCL GAVE LOW MOL WT,  
 I-III COPOLYMERS. THE ABOVE CATALYSTS WERE NOT EFFECTIVE IN PROMOTING  
 THE COPOLYMER OF I WITH BUCH:CH SUB2. FACILITY: INST. KHIM.,  
 TALLIN, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--CONDITIONS FOR THE USE OF CARBOXYL CONTAINING LATEX SKD-1 DURING  
THE PREPARATION OF SYNTHETIC LEATHER -U-  
AUTHOR--(05)-YERKOVA, L.N., BERESNEV, V.N., MARTINSON, J.K., KOZHUROVA,  
T.S., KHIMICH, O.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 418-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CARBOXYLATE RUBBER, LEATHER, RUBBER ADHESIVE, HYDROGEN  
BONDING/(U)SKDI SYNTHETIC RUBBER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PRUXY REFL/FRAME--1992/0337 STEP NO--UR/0080/70/043/002/0418/0422  
CIRC ACCESSION NO--AP0111531  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111531

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAUSES FOR INCREASED RIGIDITY OF ARTIFICIAL LEATHER (I) BONDED WITH SKD-1 LATEX (II) WERE STUDIED. THE RIGIDITY OF I INCREASED WITH THE CHARGE CARRIED BY THE CATION OF THE COAGULATING ELECTROLYTE (MOST RIGID I WAS OBTAINED WHEN II WAS COAGULATED WITH AL SUB2(SO SUB4)SUB3), AND AT HIGH PH (AT PH 4.5 THE RIGIDITY WAS 10,000-5,000 G)., PRESUMABLY DUE TO THE COPPIN. OF II WITH AL(OH)SUB3. RIGID POLYMERS RESULTED FOLLOWING COAGULATION WITH NACL (AT HIGH PH), APPARENTLY DUE TO THE FORMATION OF H BONDS BETWEEN THE OH AND THE CO SUB2 H GROUPS OF II. LEAST RIGID I WERE OBTAINED AT PH IS LESS THAN 4.5 AND WITH NACL COAGULANT.

UNCLASSIFIED

MARTINOV, G. G.

Geological +  
Mineralogical

FOSSIL BIRDS FROM THE COBI DESERT

Author: G. G. Martinov, Institute of Geological and Mineralogical Sciences, Academy of Sciences of the USSR, Moscow, U.S.S.R. (Received 10/10/77, and accepted for publication 11/10/77).  
 Title: Fossil birds from the Cobi Desert, Uzbekistan. (Received 10/10/77, and accepted for publication 11/10/77).  
 Abstract: The Cobi Desert, located in the southwestern part of the USSR, is one of the most important areas for the study of the evolution of the avifauna of the USSR. The results of the study of the fossil birds from the Cobi Desert are presented in this paper. The study was carried out by the author in 1977. The results of the study are presented in this paper. The study was carried out by the author in 1977. The results of the study are presented in this paper.

The Cobi Desert, located in the southwestern part of the USSR, is one of the most important areas for the study of the evolution of the avifauna of the USSR. The results of the study of the fossil birds from the Cobi Desert are presented in this paper. The study was carried out by the author in 1977. The results of the study are presented in this paper. The study was carried out by the author in 1977. The results of the study are presented in this paper.

A group of representatives of the avifauna of the Cobi Desert in Central Asia has been studied. The study of the fossil birds from the Cobi Desert is one of the most important areas for the study of the evolution of the avifauna of the USSR. The results of the study of the fossil birds from the Cobi Desert are presented in this paper. The study was carried out by the author in 1977. The results of the study are presented in this paper. The study was carried out by the author in 1977. The results of the study are presented in this paper.



Acc. Nr:

**A70045328**

Abstracting Service: **5/70**

INTERNAT. AEROSPACE ABST.

Ref. Code:

**LR0441**

**A70-23383 #** On one method for solution of a point boundary value problem for calculating system of differential equations with parameters (Pro odin metod rosv'iazuvannia tochkovoi kraiovoi zadachi dlia zchislennoi sistemi diferentsial'nikh rivniani' z parametrami). ~~A. A. Martichuk~~ and A. A. Sukennik (Akademiia Nauk Ukrain's'koj RSR, Institut Matematiki, K'iev, Ukrainian SSR). *Akademiia Nauk Ukrain's'koj RSR, Dopovidy, Seriya A-Fiziko-Tekhnichni i Matematichni Nauki*, vol. 32, Jan. 1970, p. 17-20. 5 refs. In Ukrainian.

The solution of a boundary value problem for a system of differential equations with parameters is found in the form of power series. Recurrent ratios are established to find the coefficients of these series. Estimations of initial values and parameters are given for the Cauchy problem considered in connection with the boundary value problem, with which its solutions possess a stability property at the finite interval with respect to the boundary value problem solutions. (Author)

ACS

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REEL/FRAME  
**19780252**

1/2 018 UNCLASSIFIED PROCESSING DATE--1604770  
TITLE--THE SYNTHESIS OF THE OPTIMAL CONTROL SYSTEMS OF THE POWER AND THE  
ENERGETIC PLANTS FOR SPACE VEHICLES USING NUCLEAR ENERGY -U-  
AUTHOR--(05)-BUDNER, V.A., BUGROVSKY, V.V., KANIOVSKY, S.S., MARTIQANOYA,  
T.S., RYASANOV, J.A.  
COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON  
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 33 P.  
DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, SPACECRAFT NUCLEAR PROPULSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--1996/0005

STEP NO--FR/0000/70/000/000/0033/0033

CIRC ACCESSION NO--AT0117305

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70  
CIRC ACCESSION NO--AT0117305  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE CHARACTERISTICS  
AND PRINCIPLES OF A COMPLEX, AUTOMATIC CONTROL SYSTEM USED FOR NUCLEAR  
PROPULSION OF SPACE VEHICLES. SPECIAL ATTENTION IS GIVEN TO A SINGLE,  
COMPLEX AUTOMATIC CONTROL SYSTEM WITH A VARIABLE STRUCTURE, USING  
OPERATIONAL REGIMES AND AN INBOARD DISCRETE CONTROL SETUP. AS AN  
EXAMPLE, THE REALIZATION OF A SYSTEM FOR STABILIZING THE OPERATIONAL  
REGIME OF A THERMIONIC GENERATOR IS PRESENTED.

UNCLASSIFIED

USSR

UDC 621.382.3

FEDOTOV, Ya. A., MARTIROSOV, I. M., DATIYEV, K. M., and KUZNETSOV, Yu. A.

"Avalanche-Drift Diode With a Heterojunction"

Leningrad, Fizika i tekhnika poluprovodnikov, vol. 5, No. 8, 1971, pp 1671-1672

Abstract: In the course of work on avalanche-drift diodes with heterojunctions of Ge-GaAs, specimens were obtained in which the generation of UHF oscillations was observed. Heterojunctions with a p-n-n<sup>+</sup> structure were obtained by growing layers of p-type germanium alloyed with gallium, the layer thickness being 7 microns, with an acceptor impurity of about  $1 \cdot 10^{16}/\text{cm}^3$ , on n-type GaAs epitaxial film, 6 microns thick with a donor impurity concentration of about  $6 \cdot 10^{15}/\text{cm}^3$ , grown on an n substrate with a resistivity of 0.001 ohm cm. The power supplied to the load in the oscillations amounted to 40-120 mw per pulse at a frequency of 11 GHz. The volt-ampere characteristic of an AV-15 diode, belonging to this class of device, is given. The authors are associated with the Moscow Steel and Alloy Institute.

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resonance of a circuit at the  $n$ -th harmonic, the amplitude and phase of the voltage of the first harmonic (and consequently also the power at the basic frequency) are abruptly changed. Distant from the resonance, the effect of the  $n$ -th harmonic is negligibly small. The conclusions are confirmed by experiment. 7 ill. 1 ref. Summary.

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USSR

UDC 621.382.2

MARTIROSOV, I.M., KOZIDUBOV, V.P.

"Effect Of Higher Harmonics On The Power Of A Generator Using An IMPATT Diode"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov. radio," 1970, pp 203-212 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B136)

Translation: The dependence is considered of the power of a generator using an IMPATT diode at the fundamental frequency, on the parameters of the circuit of a

USSR UDC 617-001.28-036.11-06.11-06:616.151.5-02:616.155.1-003.812

MARTIROSOV, K. S., Military Medical Academy imeni S. M. Kirov, Leningrad

"The Effect of Erythrocyte Destruction Products on Blood Coagulation in Acute Radiation Sickness"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 5, 1971, pp 37-41

Abstract: The effects on some indicators of blood coagulation (coagulation time, recalcification time, fibrinase activity, and so forth) of (a) hemolysate added to the blood of irradiated dogs in vitro and (b) intravenous injection of irradiated animals with hemolyzed erythrocytes was studied. The addition of a hemolysate to blood from animals irradiated with 300 r distinctly improved all the indicators studied, suggesting that erythrocytes contain a factor capable of favorably affecting coagulation in acute radiation sickness. The same effects followed intravenous injection of a hemolysate. This is regarded as the result of replacement therapy, i.e., partial compensation of the missing coagulation factor(s). Though most of the dogs did not survive, the experimental dogs lived an average of 2 days longer than controls (18 and 16 days, respectively).

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USSR

UDC 577.3

ALIKHANYAN, M. A., MARTIROSOV, S. M., and PETROSYAN, L. S., Yerevan Institute of Physics

"Determination of the Movement of Hydrogen, Potassium, and Sodium Ions Across Bacterial Membranes Using Cation-Selective Electrodes"

Yerevan, Biologicheskii Zhurnal Armenii, No 5, 1973, pp 27-30

Abstract: The proposed method is based on the fact that the surface:volume ratio in a bacterial suspension is substantial ( $\sim 10^5 \text{ cm}^{-1}$ ) and even slight changes in ion transport can be readily detected from change in their activity in the medium. An experiment was performed with *Streptococcus faecalis* to reveal the relationship between the transport of hydrogen and sodium ions and the absorption of potassium ions. During the first 1-1/2 hours there was no glucose in the solution and, accordingly, no energy-dependent escape of  $\text{H}^+$  from the bacteria, although the potassium ions left the cells fairly rapidly. The addition of glucose to the medium resulted in the bacteria releasing  $\text{H}^+$  in exchange for  $\text{K}^+$ . However, when the microorganisms accumulated high intracellular potassium concentrations by the third hour, further energy-dependent release of  $\text{H}^+$  became necessary in order to maintain this high concentration for 3 to 4 hours longer.

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1/2 024 UNCLASSIFIED PROCESSING DATE--20MAY70  
TITLE--PERMEABILITY OF MUSCLE FIBER MEMBRANES TO POTASSIUM, RUBIDIUM, AND  
CESIUM -U-  
AUTHOR--(02)--PARTIRSCOV, S.M., MIKAYELIAN, L.G.  
COUNTRY OF INFO--USSR  
SOURCE--TSITOLEGIYA 1970, 12(4), 505-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PERMEABILITY MEASUREMENT, POTASSIUM, RUBIDIUM, CESIUM, MUSCLE  
TISSUE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/C276 STEP NO--UR/9053/70/012/004/0505/0509  
CIRC ACCESSION NO--AP01360-11  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 024

CIRC ACCESSION NO--AP0134081  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE MEMBRANE POTENTIALS OF MUSCLE FIBERS WERE MEASURED IN SOLNS. CONTG. K PRIME POSITIVE, RB PRIME POSITIVE, OR CS PRIME POSITIVE. RELATIVE PERMEABILITIES (P SUBRB-P SUBK AND P SUBCS-P SUBK) DEPEND ON ASYM. PROPERTIES OF THE MEMBRANE IN RELATION TO K PRIME POSITIVE. IN CONDITIONS OF ELECTROGENIC EXTRUSION OF NA PRIME POSITIVE FROM MUSCLES WITH A HIGH INTRACELLULAR NA PRIME POSITIVE CONC., THE MEMBRANE POTENTIALS WERE MORE NEG. WHEN THE MEMBRANE WAS LESS PERMEABLE TO IONS REPLACING INTRACELLULAR NA PRIME POSITIVE (K SUBK SMALLER THAN E SUBRB SMALLER THAN E SUBCS FOR P SUBK LARGER THAN P SUBRB LARGER THAN P SUBCS). FACILITY: LAB. PHYSICL. VEG. NERV. SYST., INST. PHYSIOL., EREYAN, USSR.

USSR

MARTIROSOV, S. M., and AMBARTSUMYAN, T. G., Yerean Physical Faculty

"Cellular Electrogenesis During Active Cation Transport"

Moscow, Biofizika, Vol 18, No 5, Sep/Oct 73, pp 845-849

Abstract: Equations were derived for membrane potentials based on the classical hypothesis that Na and K transport involves special carriers, and that one transport cycle involves hydrolysis of one ATP molecule and transfer of 3 Na ions and 2 K ions. Artificially decreasing membrane permeability to K ions by the addition of cocaine, or replacement of K by rubidium or cesium ions for which the membranes show inferior permeability, leads to even greater hyperpolarization in electrogenically active cation transport. The data were interpreted as suggesting that passive movement of ions across membranes is of great importance in electrogenesis related to the sodium pump.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--ION EXCHANGE DURING ELECTROGENIC ACTIVE TRANSPORT OF IONS -U-  
AUTHOR--(02)-MARTIROSOV, S.M., MIKAYELIAN, L.G.  
COUNTRY OF INFO--USSR  
SOURCE--BIOFIZIKA 1970, 15(1), 104-11  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE PHYSIOLOGY, BIOPOTENTIAL, CELL PHYSIOLOGY, CELL  
MEMBRANE, SODIUM COMPOUND, POTASSIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0012

STEP NO--UR/0217/70/015/001/0104/0111

CIRC ACCESSION NO--AP0105112

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEMBRANE POTENTIALS OF MUSCLE FIBERS WITH HIGH INTRACELLULAR NA CONCN. WERE DETD. IN THE PERIOD OF ELECTROGENIC ACTIVE ION TRANSPORT. THE MEMBRANE POTENTIAL DECREASE WAS RELATED TO THE INCREASE OF THE K PRIME POSITIVE CONCN. IN THE MEDIUM AND REMAINED ALMOST CONST. DURING INCREASE OF THE INTRACELLULAR NA PRIME POSITIVE CONCN. AND SIMULTANEOUS K PRIME POSITIVE DECREASE; AT THE SAME TIME, THE DIFFERENCE BETWEEN THE DETD. MEMBRANE POTENTIAL AND K PRIME POSITIVE POTENTIAL REMAINED CONST. IN THE 1ST INSTANCE, AND INCREASED IN THE 2ND.

FACILITY: INST. PHYSIOL., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 681.2.084.2:541.132.3

BARTAZAROV, E. G., DEVDARIANI, I. V., KABANOV, P. S., and  
MARTIROSOV, V. D.

"Input Device of pH-Meter With Unipolar Field Transistor"

Moscow, Izmeritel'naya Tekhnika, No 2, Feb 73, pp 65-66

Abstract: A study was made by the Special Design Office of Analytical Instrument Making in Tbilizi of the possibility to substitute electron tubes by field transistors with p-n transition of KP102 (TN-1) type in the input stage of pH-metrical amplifier, built according to the principle of transformation of the input signal frequency. Good results were obtained with the use of a schema with feedback servosystem in the input stage of pH-meter. The principal schema and the equivalent schema of the input device are shown and calculation formulas for determining the main parameters of the device are given. The described input device used in the laboratory pH-meter, redoxmeter pH-673, works satisfactorily. The device may be used in works with different types of transducers of d-c voltage into a-c voltage. Two figures, three bibliographic references.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEPT70  
TITLE--INDUSTRIAL EXPERIENCE FOR OBTAINING ELECTRODE COKE FROM VACUUM  
RESIDUE OF MANGYSHLAK PETROLEUM -U-  
AUTHOR--ZMIYEVSKIY, P.K., TIMOFEYEV, A.A., NITROFANOV, M.G., DEREKH, P.A.,  
MARTIROSOV, V.G.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (1) 5-8  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PROPULSION AND  
FUELS  
TOPIC TAGS--PETROLEUM PRODUCT, CRUDE OIL, ELECTRODE, COKE, PETROLEUM  
DISTILLATION, VACUUM DISTILLATION, KEROSENE, PETROLEUM DESALTING,  
CHEMICAL COMPOSITION, SULFUR, VANADIUM, GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/1140

STEP NO--UR/0318/70/000/001/0005/0003

CIRC ACCESSION NO--AP0107629

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESIDUE, DISTG. 10PERCENT SMALLER THAN OR EQUAL TO 500 DEGREES, D PRIME 20 0.926, ASH 0.06, S 0.26, V 0.001, NI 0.002, COKE 8.0, TAR 28, ASPHALTENES 1.75, OIL 70, HARD PARAFFINS 17 WT. PERCENT, YIELDED, BY DELAYED COKING, ELECTRODE COKE CONTG. 7PERCENT VOLATILE MATTER. GOOD RESULTS WERE OBTAINED WHEN THE CRUDE PETROLEUM WAS DESALTED TO 10-15 MG AND THE RESIDUE CONTAINED MAX. 30-45 MG NACL-L., YIELDING GAS 9PERCENT, GASOLINE B. SMALLER THAN OR EQUAL TO 200DEGREES 10, KEROSENE, GAS OIL, AND FUEL 62, COKE 16, INCLUDING ELECTRODE COKE 6.5 WT. PERCENT. THE LATTER CONTAINED S 0.6 AND V 0.0014-0.0022PERCENT.

UNCLASSIFIED



USSR

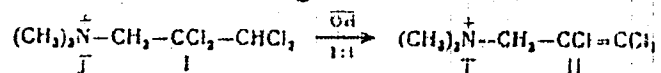
UDC 542.921+547.333.4

BABAYAN, A. T., MARTIROSYAN, G. T., DAVTYAN, N. M., Institute of Organic Chemistry, Academy of Sciences Armenian SSR

"Research in the Field of Amines and Ammonium Compounds. LXVII. Splitting of Quaternary Ammonium Salts Containing Alkyl Halide Groups"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 3, 1970,  
pp 292-204

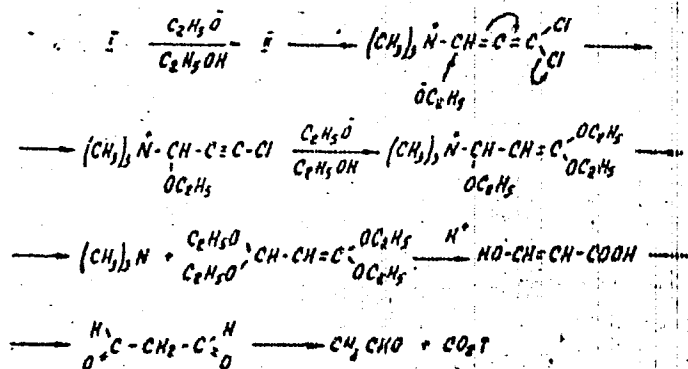
**Abstract:** It is shown that interaction of trimethyl(2,2,3,3-tetrachloropropyl)ammonium iodide (I) with an equimolecular quantity of alcohol alkali produces trimethyl(2,3,3-trichloroallyl)ammonium iodide (II), i.e. splitting of the first molecule of hydrogen chloride takes place exclusively through the hydrogen atom from the  $\gamma$ -position to the nitrogen:



Substitution of an alcohol solution of sodium ethylate for the alkali hydroxide gives trimethylamine (75%), acetaldehyde (52.6%) and carbon dioxide gas:

USSR

BABAYAN, A. T., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 3, 1970, pp 292-294

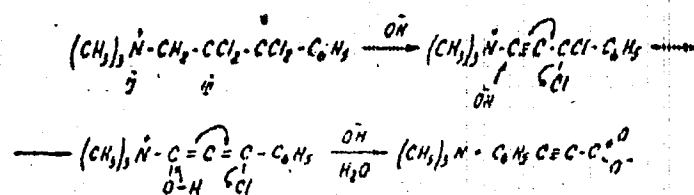


When trimethyl(2,2,3,3-tetrachloro-3-phenylpropyl)ammonium iodide is interacted with alkali hydroxide, all chlorine atoms are converted to the ionic state yielding trimethyl-amine (95%) and phenylpropionic acid (91%):

2/1

USSR

BABAYAN, A. T., et al., Armyanskiy Khimichskiy Zhurnal, Vol 23,  
No 3, 1970, pp 292-294



3/3

1/3 009 UNCLASSIFIED PROCESSING DATE--160CT70  
TITLE--AMINES AND AMMONIUM COMPOUNDS. LXVI. SPLITTING OF QUATERNARY  
AMMONIUM SALTS CONTAINING ALKYL HALIDE GROUPS -U-  
AUTHOR--(03)-DAVTYAN, N.M., MARTIROSYAN, G.T., BABAYAN, A.T.

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(1), 38-44

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--QUATERNARY AMMONIUM SALT, IODIDE, AMINE, BROMIDE, ALDEHYDE,  
CHEMICAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1448

STEP NO--UH/0426/70/073/001/0033/0044

CIRC ACCESSION NO--AP0116888

UNCLASSIFIED

2/3 009

UNCLASSIFIED

PROCESSING DATE--16OCT7C

CIRC ACCESSION NO--AP0116888

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, HEATING

2,3,DICHLOROALLYLTRIMETHYLAMMONIUM IODIDE (I) WITH 5 MOLAR EQUIVS. 20PERCENT NAOH AT 100DEGREES GAVE 80PERCENT ME SUB3 N (PICRATE M. 215DEGREES) IN THE DISTILLATE. A TOTAL OF 40PERCENT PROPYNAL WAS ALSO FORMED, 15PERCENT AS SUCH (2,4,DINITROPHENYLHYDRAZONE (DNPH) M. 123DEGREES), AND 25PERCENT AS DERIVED ACETYLENE AND FORMIC ACID.

3,3,DICHLOROALLYLTRIMETHYLAMMONIUM IODIDE (II) REFLUXED 6 HR WITH 5 MOLES NAOH GAVE 69PERCENT ME SUB3 N AND 34PERCENT 1,1,3,TRIETHOXY,2,PROPENE (III), B SUB15 89-90DEGREES, D PRIME20 0.9168, N PRIME20 SUBD 1.4249. III WITH ACID GAVE MALONALDEHYDE (DI DNPH M. 295DEGREES); WITH BR IT GAVE 2,BROMO,3,3,DIETHOXYPROPIONALDEHYDE, B SUB6 67-70DEGREES, N PRIME23 SUBD 1.4538 (DI DNPH M. 198DEGREES).

3,3,DICHLOROALLYLTRIMETHYLAMMONIUM BROMIDE SIMILARLY GAVE 72PERCENT ME SUB3 N AND 25PERCENT III. 3,3,DICHLOROALLY(ALLYL)(DIMETHYL)AMMONIUM BROMIDE (IV) GAVE 84.5PERCENT ME SUB2 NH (2,CYANOETHYL DERIV. B SUB680 165-7DEGREES; PICRATE M. 153DEGREES), AND 55PERCENT 2,ALLYL,1,1,3,3,TETRAETHOXYPROPANE (V), B SUB2 70-2DEGREES, N PRIME20 SUBD 1.4472; WITH ACID IT GAVE THE CORRESPONDING ALDEHYDE; DI DNPH M. 278DEGREES. IV WITH MECH NAOH GAVE ME SUB2 NH AND 2,ALLYL,1,1,3,3,TETRAETHOXYPROPANE, B SUB3 67-8DEGREES, D PRIME20 1.0066, N PRIME20 SUBD 1.4598. 2,3,DICHLOROALLYLTRIMETHYLAMMONIUM BROMIDE WITH NAOH ETOH GAVE 80PERCENT ME SUB3 N AND 40.8PERCENT III. 2,3,DICHLOROALLY(ALLYL)(DIMETHYL)AMMONIUM BROMIDE WITH NAOH ETOH GAVE 70PERCENT ME SUB2 NH AND 25PERCENT V.

UNCLASSIFIED

3/3 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116888

ABSTRACT/EXTRACT--I REFLUXED 6 HR WITH MEQH NAQH GAVE 70.5PERCENT OF A  
 COMPD. C SUB8 H SUB18 O SUB2 IN (VI), M. 152DEGREES; 4.1PERCENT  
 1,1,3,TRIMETHOXY,2,PROPENE, B SUB680 138-40DEGREES, O PRIME20 0.9567, N  
 PRIME20 SUBD 1.4102, AND 25PERCENT ME SUB3 N. I SIMILARLY GAVE  
 78PERCENT VI, 17.5PERCENT ME SUB3 N, AND 6PERCENT III. HE HEATED 6 HR  
 AT 40-50DEGREES WITH NAQH ETOH GAVE 50PERCENT ME SUB3 N, AND 80.5PERCENT  
 NON CRYST. C SUB10 H SUB22 O SUB2 IN. DISTG. VI WITH AQ. NAQH GAVE  
 80PERCENT ME SUB3 N; ACIDIFYING THE DISTILLATE GAVE 54PERCENT  
 MALONALDEHYDE (AS THE DNPH). VI HEATED 9 HR WITH OIL. HCL GAVE  
 30.8PERCENT MALONALDEHYDE AND 51.2PERCENT ME SUB2 N.HI, M, 260DEGREES.

FACILITY: INST, ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--300CT70  
TITLE--SYNTHESIS AND REACTIONS OF BETA,GAMMA UNSATURATED AMINES. IX.  
AMINATION OF ISOPRENE AND STYRENE BY PRIMARY MONO AND DIAMINES -U-  
AUTHOR-(04)-MARTIROSYAN, G.T., KAZARYAN, A.TS., GRIGORYAN, E.A., BABAYAN,  
A.T.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(3), 446-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CHEMICAL SYNTHESIS, AMINE DERIVATIVE, ISOPRENE, STYRENE,  
BENZENE DERIVATIVE, PRIMARY AMINE, SECONDARY AMINE, TERTIARY AMINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1666 STEP NO--UR/0366/70/006/003/0446/0449  
CIRC ACCESSION NO--AP0112660  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE AMINATION OF H SUB2  
C:CMECH:CH SUB2 WITH 1 EQUIV. RNH SUB2 (R EQUALS PR OR BU) IN THE  
PRESENCE OF NA METAL, 56.4PERCENT RNICH SUB2 CH:CME SUB2) SUB2 (II) AND  
12.9PERCENT RNHCH SUB2 CH:CME (II) WERE FORMED. WHEN 5 EQUIVS. RNH SUB2  
WERE USED, THE YIELDS OF I AND II WERE, RESP., 32 AND 35PERCENT. USING  
PHCH:CH SUB2, THE REACTION WITH 1 EQUIV. RNH SUB2 GAVE 56.2PERCENT RNICH  
SUB2 CH SUB2 PH) SUB2 (III) AND 23.9PERCENT RNHCH SUB2 CH SUB2 PH (IV).  
WHEN 3 EQUIVS. RNH SUB2 WERE USED, THE YIELDS OF III AND IV WERE, RESP.,  
0 AND 57.2PERCENT. THESE DIFFERENCES ARE DUE TO THE INTRAMOL.  
TRANSAMINATION OF II LEADING TO INTERMEDIATES, SUCH AS (RN PRIME  
NEGATIVE CH SUB2-CH:CME SUB2)NA PRIME POSITIVE, WHICH IS IMPOSSIBLE IN  
THE CASE OF IV. THE REACTION OF I! WITH PHCH:CH SUB2 OR IV WITH H SUB2  
C:CMECH:CH SUB2 GAVE 52.1-94PERCENT RNICH SUB2 CH SUB2 PHICH SUB2 CH:CME  
SUB2. FACILITY: INST. ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED



YESR.

UDC 547.835.542.953

MNDZHOYAN, AL. (DECEASED), MARKARYAN, E. A., MARTIROSYAN, T. N., SOLOMINA, L. P., and HARASHYAN, E. S., Institute of Fine Organic Chemistry, Academy of Sciences ArmSSR, Yerevan

"Isoquinoline Derivatives. VI. Synthesis and Pharmacological Properties of 4,6,7-Substituted 1(2)-Arylalkyl-1,2,3,4-tetrahydroisoquinolines and Their Analogues"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 12, Dec 71, pp 1683-1687

Abstract: Condensation of 6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline with diphenylacetic- and diphenylpropionic acyl chlorides gave respective amides -- N-(2-diphenylacetamido)- and N-(2-diphenylpropionylamido)-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline, m.p. 133-134° and 145-146° respectively. These products were reduced with LiAlH<sub>4</sub> to tertiary amines and converted to hydrochlorides: N-(β-diphenylethyl)- and N-(γ-diphenylpropyl)-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline, melting at 173-174° and 179-180° respectively. When 1-phenyl- or 1-p-methoxyphenylaminomethylcyclohexane was used in above condensation, the products were 1-(acetamidomethyl)-1-phenylcyclohexane and 3,4-dimethoxyphenylethylamide of diphenylpropionic acid. Cyclization of these amides followed by LiAlH<sub>4</sub> reduction yields respective tetrahydroisoquinolines.

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USSR

ANDZHOYAN, A. L., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 12, Dec 71, pp 1683-1687

Condensation of 1-deiphenylethyl-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline with formalin gave 2,3-dimethoxy-13-phenyl-5,6,8,13,14,14a-hexahydroisoquinolino-[2,1,-b] [2] benzazepine.

2/2

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USSR

UDC 669.721.5'5'296:620.186:669.782

SEREBRYAKOV, V. V., and MARTISHKIN, V. V.

~~SECRET~~

"Investigation of the Kinetics of the Hydrogenation Mechanism of Alloy ML12"

Tr. Mosk. aviats. tekhnol. in-ta (Works of the Moscow Aviation Technological Institute), 1970, vyp. 71, pp 74-81 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1768 by the authors)

Translation: An investigation of the kinetics of zirconium hydrogenation in alloy ML12 established a temperature dependence of the rate constant of the process and revealed two components of the rate (autogenesis and autocatalysis) of the hydrogenation process, which assure a unified process of transition from an unstable to a stable state. It was shown that surface and diffusion phenomena have an important influence on the hydrogenation rate with respect to volume. Four illustrations. One table. Bibliography of nine titles.

1/1

- 70 -

1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EVOLUTION OF HYDROGEN FROM THE SUPERSATURATED SOLID SOLUTION IN  
MAGNESIUM, ALUMINUM ALLOY ML12 -U-  
AUTHOR-(02)-MARTISHKIN, V.V., SEREBRYAKOV, V.V.  
COUNTRY OF INFO--USSR  
SOURCE--IZVEST. V.U.Z. TSVETNAYA MET., 1970, (2), 134-136.  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CHEMICAL REACTION KINETICS, SOLID SOLUTION, MAGNESIUM ALLOY,  
ALUMINUM ALLOY, HYDROGEN/(U)ML12 ALUMINUM MAGNESIUM ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/1500 STEP NO--UR/0149/70/000/002/0134/0136  
CIRC ACCESSION NO--AT0130429  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130429

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF H EVOLUTION FROM THE SOLID SOLUTION OF AN ALLOY OF THE MG,AL SYSTEM (ML12) WERE STUDIED AND COMPARED WITH EXISTING DATA RELATING TO OTHER ALLOYS OF THE SAME SYSTEM. AT ROOM TEMP. 60PERCENT OF THE ORIGINAL H CONTENT WAS LOST IN THE FIRST 2 H; AFTER 6 H THE RATE OF EVOLUTION BECAME VERY SLOW, OWING TO THE FALL IN H CONCENTRATION IN THE SOLID SOLUTION. CORRESPONDINGLY THE RATE OF EVOLUTION VARIED WITH INITIAL H CONTENT. IN THE CASE OF ML12, IN CONTRAST TO THAT OF OTHER ALLOYS OF THE SAME SYSTEM, THE RATE OF H EVOLUTION PASSED THROUGH A MAX. FOR AN INITIAL CONTENT OF 30 CM PRIME3-100 G.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SEPARATION OF HYDROGEN FROM A SUPERSATURATED SOLID SOLUTION IN THE  
ML12 ALLOY -U-  
AUTHOR--(02)-MARTISHKIN, V.V., SEREBRIAKOV, V.V. S  
COUNTRY OF INFO--USSR  
SOURCE--TSVETNAIA METALLURGIYA, VOL. 13, NO. 2, 1970, P. 134-136  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--HYDROGEN, SOLID SOLUTION, CHEMICAL SEPERATION, ZIRCONIUM  
ALLOY, ZINC ALLOY/(U)ML12 ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0196 STEP NO--UR/0136/70/013/002/0134/0136  
CIRC ACCESSION NO--AP0123965  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123965

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. DISCUSSION OF EXPERIMENTS IN WHICH THE DECOMPOSITION OF SUPERSATURATED HYDROGEN SOLUTIONS IN A ZINC ZIRCONIUM ALLOY WAS STUDIED BY FIXING THE HYDROGEN RELEASED AT ROOM TEMPERATURE WITH AN EUDIMETER. IT IS FOUND THAT 60 PER CENT OF THE HYDROGEN SEPARATES DURING THE FIRST THREE HOURS, AND THAT SEPARATION IS DRASTICALLY REDUCED AFTER 5 TO 6 HR DUE TO THE DECREASE IN HYDROGEN CONCENTRATION IN THE SOLID SOLUTION. IT IS SHOWN THAT FOR A CERTAIN RANGE OF CONCENTRATIONS 30 TO 45 CU CM HYDROGEN PER 100 G OF METAL), ZIRCONIUM HYDRIDES FORM IN THE ALLOY. THIS REDUCES THE DEGREE OF SUPERSATURATION OF THE HYDROGEN SOLUTIONS. FACILITY: MOSKOVSKII AVIATIONNIYI TEKHOLOGICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 669.721.5

M  
SEREBRYAKOV, V.V., MARTISHKIN, V.V., Moscow Aviation Technological Institute,  
Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Effect of Hydrogen on the Corrosion Properties of a Magnesium Alloy Containing Zirconium"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol 12, No 1, 70, pp 51-54

Abstract: The study concerns the role of hydrogen in changes in the corrosion properties of a Mg-4.0% Zn alloy containing zirconium. Preparation of the alloy and its saturation with hydrogen are described in great detail and changes in the chemical composition of the alloy Mg-4.0% Zn+0.50% Zr, as a function of hydrogen saturation, are presented tabularly. Hydrogen treatment greatly induces the formation of zirconium hydrides, which is confirmed by a decrease in zirconium content in the solid solution, while the total amount of zirconium in the alloy remains constant. An increase in the amount of hydride precipitation raises the mechanical properties and reduces the grain size. It also reduces the precipitation of  $Mg_2Zn_3$  type compounds, which is favorable to the higher corrosion resistance of alloys. The finer the grain and the more dispersive the precipitations, the greater the mechanical bond between the grain-anodes and the less destructive the transition of the cathode phase components to solution.

1/1



1/2 043 UNCLASSIFIED PROCESSING DATE--02 OCT 70  
TITLE--EFFECT OF HYDROGEN ON THE CORROSION PROPERTIES OF A MAGNESIUM ALLOY  
CONTAINING ZIRCONIUM -U-  
AUTHOR--(02)--SREBRYAKOV, V.V., MARTISHKIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOLOG. 1970, 13(1), 51-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MAGNESIUM ALLOY, ZIRCONIUM CONTAINING ALLOY, ALLOY ADDITIVE,  
HYDROGEN, SEA WATER CORROSION, CORROSION RESISTANCE, GRAIN REFINEMENT,  
INTERMETALLIC COMPOUND, ALLOY HEAT TREATMENT, ZINC CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1974/1797

STEP NO--UR/0153/70/013/001/0051/0054

CIRC ACCESSION NO--AT0115526

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--0200T70

2/2 033

CIRC ACCESSION NO--ATO115626

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATMENT OF A MOLTEN MG ALLOY CONTG. 4.08PERCENT ZN AND 0.42-0.50PERCENT ZR WITH H TO PRODUCE AN ALLOY CONTG. 20-45 CM PRIME3 H-100G, IN BOTH SOLID SOLN. AND HYDRIDE FORM, REDUCES THE CORROSION BY A 3PERCENT NACL SOLN. TO SIMILAR TO 5 CM PRIME3 H-CM PRIME2 IN 1 MIN. HEAT TREATMENT OF THE ALLOY AFTER H TREATMENT, FOR 6 HR AT 300DEGREES OR FOR 2 HR AT 400DEGREES, FOLLOWED BY 3 HR AT 490DEGREES AND AGING FOR 50 HR AT 150DEGREES, FURTHER REDUCES THE CORROSION TO 3-4 CM PRIME3 H-CM PRIME2 IN 1 MIN. THE BENEFICIAL EFFECT IS ATTRIBUTED TO THE DECREASED SEPN. OF COMPS., SUCH AS MG SUB2 ZN SUB3, AND SMALLER GRAIN SIZE. THE FINER THE GRAIN SIZE, AND THE BETTER THE DISPERSION, THE STRONGER IS THE MECH. BOND AMONG THE ANODIC GRAINS AND THE LESS DESTRUCTION OCCURS BY TRANSFER OF THE CATHODIC PHASE COMPONENTS TO THE SOLN. PHASE.

UNCLASSIFIED

USSR

UDC 621.391:519.8

MARTON, K.

"Asymptotic Behavior of  $\epsilon$ -Entropy of Discrete Stable Processes"

Moscow, Problemy Peredachi Informatsii, Vol 7, No 2, 1971, pp 3-15

Abstract: The purpose of this article is to produce upper and lower asymptotic bounds for the  $\epsilon$ -entropy of stable sources with discrete time, with a finite number of states, and with a criterion of accuracy of reproduction fixed by means of an additive loss function. In the general case evaluations produced may not correspond asymptotically. They always correspond in the case of Markov sources.

1/1

- 125 -

Acc. Nr. **AP0029096**

Ref. Code: UR 0477

PRIMARY SOURCE: *M* Zdravookhraneniye Belorussii, 1970, Vol 16, Nr 1,  
pp *43-45*

CONCERNING DUODENECTOMY

*Yu. B. Martov*

SUMMARY

Different methods of duodenectomy were tested on 14 dogs. Due to rough disturbances of the protein, carbo-hydrate and fat metabolisms the dogs grew weak and perished in 1.5-5 months.

*mb*

*1/1*  
REEL/FRAME

**19680607**

*2*

USSR

UDC 669.15-194.2.017

BUNIN, K. P., MARTSINIV, B. F., REPINA, N. I., and YATSENKO, A. I.,  
Institute of Ferrous Metallurgy

"Structure and Chemical Microheterogeneities of Cast Low-Carbon Iron Alloys  
During the  $\delta \rightarrow \alpha$  Transformation"

Kiev, Metallofizika, No 40, 1972, pp 90-95

Abstract: The structural features and chemical microheterogeneity were investigated for cast iron-carbon alloys with 0.05-0.15% C and alloyed with Si, Al, Cr, Cu, Mn, and Mo. The direct segregation of alloying elements into deltadendrites was shown by micro-x-ray spectral analysis. In the delta-gamma transformation process the growth of austenite occurs in the form of orderly oriented plates, similar to the transformation during heating. The formation of austenite is accompanied by depletion of Si, Al, and Mo and a weak enrichment of Ni, Cu, and Mn. In alloys being tested for a double delta-gamma-alpha transformation, orderly oriented blocks inside the ferrite appeared. 4 figures, 1 table, 27 bibliographic references.

1/1

UDC 616.988-614.4

USSR

RETINA, T. N., POVALISHINA, T. P., MARTSINKEVICH, Ch. I.,  
VASYUTA, Yu. S., KLUG, L. S., and FIATIPPENKOVA, Ye. D., Republic  
Sanitary Epidemiological Station of the Bashkir SSR, Institute  
of Poliomyelitis and Viral Encephalitides of the USSR Academy of  
Medical Sciences, Main Sanitary Epidemiology Administration, of  
the RSFSR Ministry of Health, and the Ufa City Sanitary Epidemio-  
logical Station

"Epidemiological Analysis of Hemorrhagic Fever Diseases With a  
Renal Syndrome Observed in Health Institutions in the City of  
Ufa"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 1, Jan/Feb 71, pp 74-  
76

Abstract: The 1964-1965 epidemic of hemorrhagic fever with a  
renal syndrome in the Bashkir ASSR was thoroughly analyzed to  
elucidate the source and route of infection. A total of 99 cases  
of the disease were recorded in the resort city of Ufa among  
students, employees, and tourists: 11 cases in the pioneer  
camp, 13 in the Sanitary Forest School, 34 in the Children's  
Tuberculosis Sanatorium, and 41 cases at the rest home. During  
1/2

USSR

RETINA, T. N., et al., Kazanskiy Meditsinskiy Zhurnal, No 1,  
Jan/Feb 71, pp 74-76

the epidemic, the Ufa region was infested with rodents; field and house mice and voles were found in attics and basements and under porches of poorly constructed houses and in the forest. The pathogen was transmitted mainly through the air to individuals who breathed air with dust-containing particles emitted by infected rodents. This included persons working within buildings, sleeping in tents, or employed in field work. The main preventive measure is eradication of rodents living in buildings and in natural environments.

2/2

1/2 033 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--DETERMINATION OF THE MOBILITY AND CONCENTRATION OF CARRIERS IN  
SEMICONDUCTORS AT ULTRAHIGH FREQUENCY USING A BIMODAL RESONATOR -U-  
AUTHOR-(02)-GERSHENZON, YE.M., MARTSINKEVICH, V.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 542-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYOGENIC PROPERTY, GERMANIUM SEMICONDUCTOR, ALTERNATING  
MAGNETIC FIELD, ELECTRON MOBILITY, RESONATOR, CARRIER DENSITY, ULTRAHIGH  
FREQUENCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0098

STEP NO--UR/0449/70/004/003/0542/0548

CIRC ACCESSION NO--AP0105184

UNCLASSIFIED



2/2 033

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105184

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF USING A BIMODAL RESONATOR FOR MEASUREMENT OF THE MOBILITY ( $\mu$ ) AND CONC. ( $N$ ) OF CARRIERS IN SEMICONDUCTORS AT ULTRAHIGH FREQUENCIES (8-MM BAND) EVEN AT LIQ. HE TEMP. AND STRONG MAGNETIC FIELDS ( $\mu B$  GREATER THAN 1) IS DISCUSSED. SIMPLIFIED EXPRESSIONS ARE GIVEN FOR EVALUATING  $\mu$  UNDER THE CONDITIONS: ( $V_{SUBC}$  IS SMALLER THAN 1,  $V_A$  ARBITRARY); ( $V$  IS SMALLER THAN 1,  $V_{SUBC}$  IS GREATER THAN 1); ( $V$  IS GREATER THAN 1,  $V_{SUBC}$  IS GREATER THAN 1); AND ( $V_{SUBC}$  IS GREATER THAN  $V$  IS GREATER THAN 1), AS WELL AS FOR  $N$  AT ( $V$  IS SMALLER THAN 1,  $V_{SUBC}$  IS SMALLER THAN 1); ( $V$  IS GREATER THAN 1,  $V_{SUBC}$  IS GREATER THAN 1); AND  $V$  IS SMALLER THAN 1,  $V_{SUBC}$  IS GREATER THAN 1; HERE  $V_{SUBC}$  EQUALS  $E \tau \omega / \mu B$ ,  $V$  EQUALS  $\omega \tau$ ;  $\omega$  IS THE FREQUENCY OF THE ELECTROMAGNETIC FIELD AND  $\tau$  IS THE MOMENTUM RELAXATION TIME. THESE EXPRESSIONS ARE CONSISTENT WITH EXPTL. RESULTS OBTAINED WITH N GE AT 8-20 DEGREE SK. FACILITY: MDSK. GOS. PEDAGOG. INST. IN. LENINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.315.592

GERSHENZON, Ye. M. and MARTSINKIVICH, V. N.

"Using a Bimodal Resonator to Determine the Mobility and Concentration of Carriers in Semiconductors at Ultrahigh Frequencies"

Fizika, i Tekhnika Poluprovodnikov, Vol. 4, No. 3, March 1970, pp. 542-548

Abstract: Most of this article is devoted to a derivation of various mathematical formulas for determining mobility and concentration as a function of observed parameters in the bimodal resonator. The fundamental equation from which the authors begin is taken from an article by N. Watanabe in the Journal of the Physical Society of Japan, Vol. 16, No. 10, 1961. It expresses the square root of the ratio of input and output power in the bimodal resonator as a function of the external and natural Q factors of the resonator, the electrical fields in the sample and resonator, the volumes of the sample and resonator, the tensor or sample conductivity, the concentration of free carriers, the electron charge, the effective mass and the electromagnetic field frequency and impulse relaxation time.

From the initial formula, it is evident that the result is determined by 2 factors: rotation of the plane of polarization of the waves, caused

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USSR

GERSHENZON, Ye, M., et al, Fizika i Tekhnika Poluprovodnikov, Vol. 4, No. 3, March 1970, pp. 542-548

by varying speeds of propagation of the two circular waves making up the plane polarized wave; elliptic polarization, connected with variations in the absorption of the circular waves. The former causes active unbalance of the resonator and the latter causes reactive unbalance. The relationships of the two types of unbalance depend on the factor equal to the frequency of the electromagnetic field multiplied by the impulse relaxation time. On the basis of these considerations, the authors develop a general formula for the square root of the ratio of output power to input power; however it is too complex for practical use. They then discuss possible simplifications in 4 special cases:

- 1) The product of Hall mobility and magnetic field induction is much less than 1.
- 2) The product of Hall mobility and magnetic field induction is much greater than 1, the electromagnetic field frequency multiplied by relaxation time is much less than 1.
- 3) Both these factors are much greater than 1.
- 4) The Hall relaxation time multiplied by the magnetic field induction is much greater than the product of field frequency and relaxation time, which is itself greater than 1.

2/4

USSR

GERSHENZON, Ye. M., et al, Fizika i Tekhnika Poluprovodnikov, Vol. 4, No. 3, March 1970, pp. 542-548

In each case they derive simplified formulas for computing the mobility.

In determining concentration the primary source of difficulty is the requirement that the electrical field within the sample be known; only for very thin samples that cannot be calculated. The authors recommend additional measurements to eliminate the necessity for using the space factor in calculating concentration, thus eliminating the necessity for determining the electrical field inside the sample. They give a formula for determining the relative shift in resonator frequency, assuming small resonator perturbations due to a highly resistant nonmagnetic sample. They also consider some important special cases in which concentration can be determined, if it is assumed that free carriers make only a small contribution to dielectric permeability. These three cases are again determined by the values of the constants mentioned before:

1) The product of frequency and relaxation time is less than 1, the product of mobility and induction is much less than 1.

3/4

USSR

GERSHENZON, Ye. M., et al, Fizika i Tekhnika Poluprovodnikov, No. 3, Vol. 4, March 1970, pp. 542-548

2) Both factors are greater than 1.

3) The product of frequency and relaxation time is much less than 1; the product of mobility and induction is much greater than 1.

Experiments were also performed using electromagnetic waves in the 8 mm band. The article includes a block diagram of the apparatus used and a summary of the results, indicating fairly good agreement with the theoretical predictions. The authors conclude that a bimodal resonator can be used in a broad class of problems involving the determination of semiconductor material parameters.

USSR

UDC 621.372.2

M  
NARTSINKEVICHYUS, A. K., MILYUSHIS, I. I., SHVEDENE, L. A.

"Problem of Calculating the Loss Coefficient in Band Transmission Lines"

Techn. kibernetika, Tekhn. kibernetika (Technical Cybernetics), Kaunas, 1970,  
pp 229-237 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B146)

Translation: This article contains an investigation of expressions permitting determination of the magnitude of the ohmic and dielectric losses in band transmission lines which are suitable for creating connections in superhigh-speed integral macrojunctions and in systems made up of them. There are four illustrations, one table and an eight-entry bibliography.

1/1.

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SECONDARY ELECTRON EMISSION AND ELECTRON MOTION IN MOLECULAR  
CRYSTALS -U-  
AUTHOR--MARTSINOVSKAYA, E.G.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(3), 922-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--SECONDARY ELECTRON EMISSION, MOLECULAR CRYSTAL, ELECTRON  
MOTION, ELECTRON ENERGY, FREE PATH, INELASTIC SCATTERING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/1976 STEP NO--UR/0181/70/012/003/0922/0924  
CIRC ACCESSION NO--AT0105050

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0105050

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN TERMS OF THE MODEL OF "COMPRESSED GAS," AN EXPLANATION IS GIVEN OF THE BASIC CHARACTERISTICS OF SECONDARY ELECTRON EMISSION OF MOL. CRYSTALS AT ENOUGH ENERGIES OF THE PRIMARY ELECTRONS. THE NO. OF PRIMARY ELECTRONS AS A FUNCTION OF DEPTH  $x$ ,  $N(x)$ , IS DETD. BY THE CHARACTER OF MOTION AND THE MECHANISM OF ENERGY LOSSES BY THE PRIMARY ELECTRONS. ACCORDING TO THE ABOVE MODEL, ALL ENERGY LOSSES BY FAST ELECTRONS IN THE MOL. CRYSTALS SHOULD TAKE PLACE AS A RESULT OF INELASTIC COLLISIONS WITH SEP. MOLS. OF THE SUBSTANCE. THESE COLLISIONS LEAD TO ENERGY LOSSES BY THE PRIMARY ELECTRONS NOT ONLY FOR IONIZATION OF THE EMITTER MOLS., WHICH PRODUCES SECONDARY ELECTRONS, BUT ALSO FOR THE EXCITATION OF ELECTRONIC LEVELS OF THE MOLS. ENERGY LOSSES FOR THE EXCITATION ARE QUITE LARGE. THUS, THE POSSIBILITY OF CONSIDERABLE ENERGY LOSSES BY PRIMARY ELECTRONS WITHOUT FORMATION OF SECONDARY ELECTRONS IS APPARENTLY THE CAUSE OF THE EXPTL. QBSD. SMALL VALUES OF THE DISTRIBUTION FUNCTION OF SECONDARY ELECTRONS. ON LEAVING THE EMITTER, THE ELECTRON OVERCOMES A POTENTIAL BARRIER EQUAL TO THE ENERGY OF POLARIZATION OF THE SURROUNDING MOLS. SLOW ELECTRONS IN THE MOL. CRYSTALS HAVE A CONSIDERABLE INTEGRAL MEAN FREE PATH.

FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED



USSR

UDC 669.14.017.3:541.12.017

BUNIN, K. P., Corresponding Member of the Academy of Sciences Ukrainian SSR, MARTSIV, B. E., RYEPINA, N. I., and YATSENKO, O. I., Institute of Ferrous Metallurgy

"Peritectic Reaction in Fe-C-Al Alloys"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A. Fizyko-Tekhnichni ta Matematychni Nauki, No 12, Dec 71, pp 1119-1121

**Abstract:** The article describes results of a study of structural and concentration changes during peritectic transformation in Fe-C-Al alloys (0.3-0.7 percent C, 1.6-3.5 percent Al). The alloys were smelted, then 10-gram batches remelted and superheated to 1580-1600° C and quenched during controlled cooling in the crystallization interval or below. The structure was analyzed microscopically, the aluminum distribution by the microx-ray spectral method. The formation of austenite was observed during the cooling. A  $\gamma$ -solid solution appears at the liquid-delta phase interface in the form of thin borders around the branches of primary  $\delta$ -dendrites. Crystallization

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USSR --

BUNIN, K. P., et al., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A, Fizyko-Tekhnichni ta Matematychni Nauki, No 12, Dec 71, pp 1119-1121

of the alloys by  $L \rightarrow \delta$  and  $L + \delta \rightarrow \gamma$  reactions is accompanied by inter-phase partition of aluminum, leading to the formation of intracrystalline microheterogeneity, which can be classified as inverse dendritic segregation.

2/2

- 50 -

USSR

UDC: 621.375.421

MARTVERK, P. E., SHUL'TS, E. A.

"Analysis of a Wide-Band Amplifier Stage Based on a Field-Effect Transistor"

Tr. Tallin. politekhn. in-ta (Works of the Tallinn Polytechnical Institute), 1970, A, No 291, pp 47-56 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D163)

Translation: The authors study the transmission factor, and the input and output impedances of an isolated amplification stage based on a field-effect transistor as functions of frequency when the transistor is operating into a resistance-capacitance load for three field-effect transistor circuit connections. The results of some experimental studies are given. Four illustrations, bibliography of seven titles. Resumé.

1/1

USSR

UDC: 8.74

TIMOFEEV, B. B., KOZLIK, G. A., KULAKOV, A. F., MART'YANOV, A. I.

"Algorithmization in Automatic Control Systems"

Algoritmizatsiya v Avtomatizirovannykh Sistemakh Upravleniya [English version above], Kiev, Tekhnika Press, 1972, 240 pp (translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V499K)

Translation: Problems of the development, computer programming, testing and operation of complex system control algorithms, algorithmic control systems (ALCS) are systematized using a single methodological basis. Significant attention is given to analysis of the problems of statement and solution of these problems during the process of creation and introduction of automatic control systems (ACS). A method is suggested for study and improvement of the qualitative characteristics of complex algorithmic systems. The book is based on the experience gained in development of specific ACS, in particular economic ACS. Its content is illustrated with examples. It is designed for engineering, technical and scientific workers involved in the development, introduction and operation of automated and automatic control systems. It may be useful to

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USSR

Timofeyev, B. B., Kozlik, G. A., Kulakov, A. F., Mart'yanov, A. I., Algorithmi-  
zatsiya v Avtomatizirovannykh Sistemakh Upravleniya, Kiev, Tekhnika Press, 1972,  
240 pp

graduate students and university students, as well as persons interested in  
problems of algorithmization and application of cybernetics to the national  
economy.

2/2

USSR

UDC: 51:621.391

KALIKA, V. I., MARTYNOV, A. P.

"On Accounting for the Vagueness of Initial Data in Optimum Planning Problems"

Ufa, Mat. metody v ekon. issled.--sbornik (Mathematical Methods in Economics Research--collection of works), 1971, pp 5-56 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V545)

Translation: A survey based on materials or papers by Soviet authors. Bibliography of 45 titles.

1/1

USSR

UDC 620.172.253.05

VASIL'CHENKO, G. S., CHERNYAVSKIY, L. L., ROMANOV, V. S., and MART'YANOV,  
N. S., Moscow

"The VRD-300 Installation for Strength Testing of High Speed Turbine Disks"

Kiev, Problemy prochnosti, No 1, 1971, pp 97-100

Abstract: The VRD-300 installation, planned and constructed at the Central Scientific Research Institute for Heavy Machine Building in 1965, is designed for strength testing of turbine wheels up to 300 mm in diameter weighing up to 15 kg at rotating speeds up to 75,000 rpm and temperatures up to 900°C under conditions approaching actual operating conditions. The machine is similar to the VRD-500 machine designed for larger, heavier and slower turbine wheels; the VRD-300 is driven by a centripetal air turbine and rides on bearings using copper inserts between the babbit and steel bushing. Drawings of the device and a description of its principal characteristics are presented.

1/1

- 81 -

USSR

MARTYNOV, S.

"How Should Thirst Be Satisfied?"

Moscow, Sovetskaya Rossiya, 29 Apr 72, p 4

Abstract: Thirst is a great problem, especially for those who work the year-round in hot temperatures. Until recently, the best known remedy was salted water. However, experiments have shown that the body needs potassium and calcium salts and organic acids, especially citric and ascorbic acids, to reduce water loss. A series of experiments were made to find the best solution. As study in the desert proved the best drink to be a solution of cherry plum extract and citric acid. Another study conducted in a thermal chamber with 70-80% relative humidity again showed this to be the best thirst quencher, with one modification. Salt and acid requirements changed as the body adapted to them, and the solution has to be reduced several times as the volunteers found it too sour. It is certain, however, that the greater the heat, the more salts and acids are required, and the less sugar.

1/1



USSR

UDC 612.741

MART'YANOV, Y. A., KOPYLOV, YU. A., GUMTOV, M. I., Physiology Department,  
Laboratory of Programmed Sports Training and Physiology of Fitness for  
Work, State Central Order of Lenin Institute of Physical Culture, Moscow

"Degree of Utilization of the Possibilities of the Muscular System With  
Maximum Voluntary Effort"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9,  
1972, pp 1,390-1,396

Abstract: A study was made of the degree of utilizing the possibilities of  
the muscular system with maximum voluntary effort. The force of a maximum  
voluntary contraction of the muscles participating in moving the first  
finger and that caused by electric stimulation of the isometric contractions  
were compared. The force of a voluntary contraction of the m. adductor  
pollicis was below the force of an evoked contraction in 50% of the cases,  
but it was an average of  $94.1 \pm 5.7\%$  of the latter. On moving the first finger  
with the participation of several muscles (m. adductor pollicis and m.  
flexor pollicis longus), the force of the voluntary contraction was in all  
experiments appreciably below the force of an evoked contraction, and it was  
an average of  $84.9 \pm 7.2\%$  of the latter. Special instruction combined with  
1/2

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USSR

MART'YANOV, V. A., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 9, 1972, pp 1,390-1,396

certain procedural conditions resulted in an increase in the force of the voluntary contraction to the evoked level. Electrical stimulation does not lead to an increase in the voluntary contraction force in the absence of a neuro-muscular block judging from the M-responses. This indicates complete activation of the muscular system. The optimal frequency of electrical stimulation to cause the greatest evoked contraction force was determined leading to the use of square pulses with a frequency of  $50 \text{ sec}^{-1}$  for the experiments.

2/2

USSR

UDC: 621.039.531:536.21:661.666

VIRGIL'YEV, Yu. S., BURDAKOV, N. S., MART'YANOV, V. G., and  
CHURILOV, Yu. S.

"Change in Heat Conductivity of Graphite Under Radiation"

Moscow, Atomnaya energiya, No. 3, March 1971, pp 311-312

Abstract: By generalizing the available data including that obtained by the authors themselves, this article seeks to find a relationship between the change in heat conductivity of graphite, important as a construction component, and the radiation temperature and dosage. Under irradiation, the heat conductivity drops sharply, with the maximum rate of drop occurring at the initial period of the irradiation and decreasing with increasing radiation temperature. The heat conductivity measurements were made on specimens 8 mm in diameter and 10 mm in height by means of a comparative method in which a standard was used in the temperature interval of 20-120° C, with a measurement accuracy of  $\pm 5\%$ . Results of the measurements are shown in a curve of the heat conductivity of various brands of Soviet graphite, before and after irradiation, as a function of the temperature. A second curve gives the change in graphite heat resistance as a function of radiation temperature. From their experiments, the authors derive an empirical expression for the change in heat conductivity

USSR

VIRGIL'YEV, Yu. S., et al, Atomnaya energiya, No. 3, March 1971,  
pp 311-312

as a function of the irradiation dosage and temperature, with  
the damaging effects on the graphite taken into account.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC76  
TITLE--IMPROVEMENT OF THE BACTERIAL LEACHING OF COPPER --U--

AUTHOR--(03)-AGAFONOVA, G.S., KLASSEN, V.I., MARTYANOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(5), 89-91

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--LEACHING, COPPER ORE, EXTRACTIVE METALLURGY, BACTERIA,  
MAGNETIC FIELD, HYDROMETALLURGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3005/0131

STEP NO--UR/0136/70/043/005/0039/0091

CIRC ACCESSION NO--AP0132424

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132424

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. BY USING THIOBACILLUS FERROOXIDANS, THE TITLE EFFECT WAS PRODUCED BY THE APPLICATION OF A MAGNETIC FIELD TO A BACTERIAL SUBSPENSION OR TO A SOLN. OF FESO SUB4 (1.5 G.-L.) ACIDIFIED WITH H SUB2 SO SUB4 (TO PH 2.4-2.5) AND INOCULATED WITH BACTERIAL CULTURE. THE MAGNETIC FIELD WAS 150 OE AND WAS APPLIED FOR 10 SEC, AND THE BACTERIAL PROPAGATION INCREASED BY GREATER THAN 1.5 TIMES (AS COMPARED TO CONTROLS). SIMILARLY, THE REGENERATION OF FE PRIME3 POSITIVE FROM FE PRIME2 POSITIVE AFTER INOCULATION AND MAGNETIC FIELD TREATMENT PROCEEDED 1.6-1.7 TIMES FASTER THAN WHEN NO MAGNETIC FIELD WAS APPLIED.

UNCLASSIFIED

Acc. Nr:

**AP0036183**

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,  
pp 60-62

ON THE RELATIONSHIP BETWEEN MESOPHASES  
AND COLLOIDAL SYSTEMS

Kapustin, A. P.; Mart'yanova, L. I.

Summary

The temperature dependence of the ultrasound velocity and absorption in ethyl ester of 4-anisalamincinnamic acid has been studied by a pulse method. The ultrasound velocity in the phase transitions region passes through a minimum and the absorption coefficient — through a maximum. A distinct correlation has been established between the acoustic parameters and viscosity of the mesophase and the colloidal system.

D.M.

21

REEL/FAME

**19721002**

USSR

UDC: 8.74

GUSEV, V. V., MAR'YANOVICH, T. P., SAKHENYUK, M. A.

"The NEDIS Modeling System"

Teoriya Yazykov i Metody Postroyeniya Sistem Programmair. [The Theory of Languages and Methods of Construction of Programming Systems--Collection of Works], Kiev, Alushta, 1972, pp 397-405 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V541, by V. Mikheyev)

Translation: A programming system based on the NEDIS modeling language for the BESM-6 computer is discussed. NEDIS is a high level algorithmic language, designed for modeling of systems, combining discrete and continuous processes. Discrete-continuous systems are systems in which the values of parameters change continually in the time intervals between discrete events, according to time dependence fixed as a system of differential equations. The structure of the system of differential equations, like the structure of the entire system, is formed as a result of the discrete events occurring in the system. An example of description of a discrete-continuous system in NEDIS is presented.

1/1



UDC 621.791.856:669.15-194

USSR

CHEKATILO, I. V., MARTYN, V. M., ARTAMONOV, V. L., Institute of Electric Welding imeni Ye. O. Paton, YERMILOV, YU. F., MASKIMOV, V. T., and PCHELIN, YU. I., Biysk "Elektropech" Plant

"Welding of Heat Resistant Kh25N20S2, Kh23N18, and Kh25N13 Steels in Protective Gases"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 70, pp 50-53

Abstract: An investigation was conducted at the Institute of Electric Welding imeni Ye. O. Paton for the purpose of developing a technology for the gas-arch welding of Kh25N20S2 steel and its combinations with Kh23N18 and Kh23N13 steels in argon, CO<sub>2</sub>, and technical nitrogen containing 3-5%O<sub>2</sub>. The use of EP532 austenitic boride wire 1.2 and 2 mm in diameter containing 0.45-0.75 B and 2.5-3.0% Si made it possible to obtain welds without cracks. Welding techniques in different gases are described. Tables are presented which show the chemical contents of steels and wire and the transient mechanical properties of rolled EI253 steel joints welded with EP532 wire in protective gases, and figures show the microstructure of a butt weld and the microstructure of the metal deposited by EP532 wire. The results show that the strength of welds made with EP532 wire in argon, CO<sub>2</sub>,  
1/2

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USSR

CHEKATILO, I. V., et al., Avtomaticheskaya Svarka, No 8, Aug 70,  
pp 50-53

and nitrogen is equal to that of the basic metal and that  
austenization increases weld plasticity.

2/2

Corrosion

UDC: 621.791.856.3

USSR

MEDOVAR, B. I., MARTYN, V. M., CHEKOTILO, L. V., VOSVYLOV, R. M., KULEV, G. B., POLTAVETS, A. V., KRAVETS, N. I., and GLOZMAN, L. P.

"Corrosion Resistance of Joints of EP668 Alloy in Nitrogen- and Sulfur-Containing Media"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 67-68

Abstract: A study was made of the corrosion resistance of high-chromium alloy Kh50N5V (EP668) and its welded joints in highly aggressive media involved in the production of sulfuric and nitric acids. It was found that EP668 alloy and its welded joints have a high corrosion resistance in media containing nitrogen oxides NO and NO<sub>2</sub>, natural gas with air, H<sub>2</sub>S, SO<sub>2</sub>, CO<sub>2</sub>, and HCN gases. In these media the maximum corrosion rate of the parent metal and its welds is 0.019 g/m<sup>2</sup>.hour. For comparison, tests were also conducted on the most extensively employed corrosion-resistant materials, including Kh18N10T, Kh18N13M2T (AT448), OKh21N6M2T (EP54), titanium, aluminum, and St.3 steel. Under similar conditions these materials exhibited intensive corrosion. EP668 alloy is also resistant in ammonium carbonate solutions (43% NH<sub>3</sub>, 34% CO<sub>2</sub>, 23% H<sub>2</sub>O) at 100°C and a maximum pressure of 200 atm.

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Radiobiology

UDC 577.391:612.273

USSR

SVERDLOV, A. G., ~~MARTYNCHIK, Yu. E.~~, and YARKOVETS, A. G., Physical-Technical Institute imeni A. F. Ioffe, Academy of Sciences USSR, Leningrad

"Study of the Relationship Between the Hypoxic and Protective Effects of Some Radioprotective Agents"

Moscow, Radiobiologiya, No 2, 1972, pp 221-228

Abstract: Mice were treated with various protective agents (serotonin, mexamine [a serotonin analog], cysteamine, AET,  $\alpha$ -methyltryptamine, and some other drugs) to determine their effects on  $pO_2$  in the spleen and muscles and the relationship of these parameters to the survival time of the animals after single whole-body irradiation at 700 r. Mexamine and serotonin lowered the  $pO_2$  level of the tissues studied but there was no correlation with the protective effect of the indolylalkylamines, for large doses had the same effect as moderate ones, even though the former produced hyperoxia and the latter hypoxia. An antagonist of these agents,  $\alpha$ -methyltryptamine, injected 30 min prior to mexamine, did not protect the animals despite the hypoxic effect induced by the serotonin analog. Sulfur-containing agents like cystamine and AET decreased  $pO_2$  in some animals and increased it in others, but the postirradiation survival time was the same in both groups. Thus, there is

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SVERDLOV, A. G., et al., Radiobiologiya, No 2, 1972, pp 221-228

no relationship between the hypoxic and protective effects of substances like mexamine and serotonin and their mechanism of action is obviously not based on hypoxia alone. And in the case of sulfur-containing compounds its role is insignificant.

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Radiobiology

USSR

SVERDLOV, A. G., MARTYNCHIK, Yu. F., BOGATYREV, A. V., and YARKOVETS, A. G.

"The Effect of Increased Atmospheric Pressure on the Protective Effect of Some Radioprotectors"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

Abstract: Although the mechanism of chemical protection against ionizing radiation is still unexplained, the prevailing hypothesis implicates the hypoxic effect of basic radioprotectors. Yet there is mounting evidence that does not correspond to this hypothesis, including results of research on the protective effectiveness of radioprotectors in conditions of increased oxygen partial pressure ( $pO_2$ ) in tissues. The protective effectiveness of radioprotectors of various classes was studied under conditions of increased atmospheric pressure, and the effect of radioprotectors on  $pO_2$  in mouse spleen and muscle was observed. The dose power of  $Co^{60}$  irradiation was 9.9 r/min. Doses of 1,000 r ( $DL_{80/30}$ ) were administered. Twenty percent of the mice survived, apparently because of prolonged irradiation (101 min). The muscle and spleen  $pO_2$  were measured during irradiation in batches of 20 mice. The mice were closely confined, obviating tying and narcosis. Indicators were

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USSR

SVERDLOV, A. G., et al, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

platinum electrodes, open type, 0.2 mm in diameter, inserted in the hip muscle and spleen: inert silver chloride electrodes were inserted into the rectum. Radioprotectors were intraperitoneally injected in the following mg/kg doses: mexamine 50; cystamine 150; cystaphos 350, aminoethylisothiuronium (AET) 150. Pressure was increased after 10 minutes. Irradiation was begun in the 6th min at 7 atm. After injection of protectors into the spleen, changes in  $pO_2$  levels occurred which were specific for each preparation. Mexamine, in the first 10 minutes, produces  $pO_2$  decrease of 50% and cystamine and AET -- 30%, while cystaphos slightly raises  $pO_2$  by about 5%. As pressure increased, tissue  $pO_2$  also increased. The  $pO_2$  increase continues for 5-10 minutes at a maximum, exceeding initial values 2-3 times, and remains at this level. During decompression  $pO_2$  shifts are reversed, so that at normal atm spheric pressure the  $pO_2$  returns to initial level. This suggests that the hypoxic action of the radio protector is masked by increased atm spheric pressure, but can again be observed at normal pressure. Test results for muscle are analogous to those for the spleen. It was found that the protective effect

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SVERDLOV, A. G., et al, Doklady Akademii Nauk SSSR, Vol 196, No 1, 1971, pp 220-222

of all radioprotectors at increased pressure remained the same as at normal pressure, despite the sharp rise of tissue  $pO_2$  during irradiation. Some of the results are statistically unreliable. Thus hypoxia does not decrease the radioprotective effect in the examined compounds.

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is not due to cation exchange sorption but to the appearance of ionogenic exchange forces. The input of such a sorption to the separation of rare earth elements may be considerable. Analysis of the mixtures of rare earth elements in the cation exchange resin phase in the equilibrium and in the elution solutions shows that the composition of the adsorbed complex differs from the composition of analogous mixtures in other phases. The adsorbed complex may participate actively in the process of the ionic exchange.

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USSR

UDC 546.65+549.544.6+547.466

MARTYNEKO, L. I., KUPRIYANOVA, G. N., and PRUTKOVA, N. M., Moscow State University imeni M. V. Lomonosov

"Nonionic Exchange Sorption of Monoiminodiacetates of Rare Earth Elements on a Cation Exchange Resin"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 214-217

Abstract: Chemical and spectrographic analysis of the composition of eluates of monoiminodiacetic acid /TMDA/ through a cation exchange

1/2 010 UNCLASSIFIED PROCESSING DATE--300C170  
TITLE--HYDROGENATION PURIFICATION OF LIQUID PARAFFINS --U-  
AUTHOR--(04)--GONCHARENKO, A.D., MARTYSENKO, A.G., VOLKOV, A.I., VOVK, L.M.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEPEREAB. NEFTEKHIM. (MOSCOW) 1970, (3), 36-8  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDROGENATION, AROMATIC HYDROCARBON, CATALYST, SULFIDE,  
CHEMICAL PURIFICATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/2048 STEP NO--UR/0318/70/000/003/0036/0038  
CIRC ACCESSION NO--AP0125636  
UNCLASSIFIED

THE VOL. ...  
325DEGREES. AT 60-90 ATM., AROMATIC HYDROCARBON ...  
100PERCENT WITH 1600 L. H PER L. AT 325DEGREES AND A RATE OF 0.3 HR  
PRIME NEGATIVE FOR PARAFFIN D SUB20 0.7850, INITIAL B.P. 276DEGREES, 50  
AND 95PERCENT B. 300DEGREES AND 340DEGREES, M. 22DEGREES, AND CONTG.  
0.024PERCENT S AND 1.7PERCENT AROMATIC HYDROCARBONS.

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201930004-0

2/2 010  
CIRC ACCESSION NO--AP0125636  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. HYDROGENATION AT 0.25-0.5 HR PRIME  
AROMATIC HYDROCARBONS (3.1PERCENT) IN

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002201930004-0"

USSR

UDC: 621.438:669.5:545.821

KOSTYRKO, O. S., BRAUN, M. P., MARTYNENKO, A. P., ZELENAYA, L. A., and  
GRIGOR'YEV, V. P.

"Particularities Associated With Using Some Grades of Steel and Alloys at  
Low Temperatures"

V sb. Lityye iznosostoyk. materialy (Cast Wear-Resistant Materials -- col-  
lection of works), Kiev, 1972, pp 156-164 (from RZh-Turbostroyeniye, No 5,  
1973, Abstract No 5.49.152)

Translation: The authors study changes in the casting expansion factor and  
ductility within a broad

USSR

UDC: 621.382

MARTYNENKO, A. P.

"A Method of Modulating Electromagnetic Radiation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329499, Division G, filed 18 Dec 69, published 9 Feb 72, pp 184-185

Translation: This Author's Certificate introduces a method of modulating electromagnetic radiation by changing the carrier concentration in a semiconductor. As a distinguishing feature of the patent, the depth of modulation is increased by exposing the surface of the semiconductor to electromagnetic radiation with a frequency equal to the plasma resonance frequency of a plasma in the semiconductor, and modulating the intensity of the electromagnetic wave reflected from the surface of the semiconductor by changing the concentration of the charge carriers in the surface layer.

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AA0047081

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

241059 MEASURING HEAT FLOW IN A HIGH-TEMPERATURE GAS

Jet affords better accuracy and avoids the additional complication due to waste of time in attaining a steady heat state. The diagram shows the device, consisting of the main part, a calorimetric sensor 1 physically associated with a water-cooled chamber 3, the top working surfaces of which are made flush. The sensor is carried on heat-insulating bush 2, fitted concentrically in the cylindrical cavity of the water-cooled jacket with a small air gap 4. It contains an internal channel for the passage of cooling water via 10, 11 and the steady-state temperature drop due to the working surface 1 acting as a heat sink is read by differential thermocouple 7. 8, 9 are the separate water ducts for the jacket. The sensor is of copper and has a surface thickness of 1-1.5 mm.

23.10.67 as 1192130/18-10.B.A. MARTYNEV et alia.  
MATERIALS TECHNOLOGY INST. ACAD. SCIENCES UKRAINIAN SSR  
(18.8.69) Bul 13/1.4.69. Class 42. Int. Cl. G 01k.

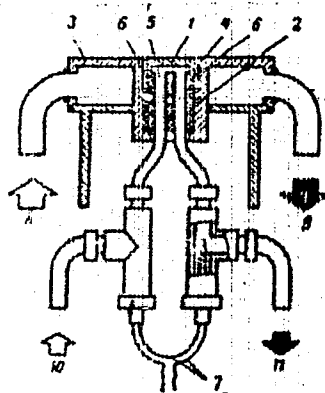
19790554



AA0047081

AUTHORS: Martynenko, B. A.; Dvernyakov, V. S.; Pasichnyy, V. V.

Institut Problem Materialovedeniya AN Ukrainskoy SSR



19790555

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF MANGANESE II CHLORIDE WITH TRIPOTASSIUM AND TRISODIUM  
ORTHOPHOSPHATES -U-  
AUTHOR-(03)-GOLOSHCHAPOV, M.V., MARTYSENKO, B.V., TORGASHIN, YU.T.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 670-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ELECTRICAL CONDUCTIVITY, AQUEOUS SOLUTION, MANGANESE CHLORIDE,  
SODIUM PHOSPHATE, POTASSIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1994/1730 STEP NO--UR/0078/70/015/003/0670/0673  
CIRC ACCESSION NO--AP0115559  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0115559

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. MNCL SUB2-M SUB3 PD SUB4-H SUB2 O (M EQUALS K OR NA) SYSTEMS WERE STUDIED AT 25DEGREES BY SOLY., AND BY PH AND ELEC. COND. DETNS. OF AQ. SOLNS. THE SOLIDS WERE INVESTIGATED THERMOGRAVIMETRICALL.. THE SYSTEMS FORM MNKPO SUB4, H SUB2 O (M. 1275DEGREES) AND MNNAPD SUB4. PRIME2 H SUB2 O (M. 1025DEGREES), RESP. FACILITY: VORONEZH. GOS. PEDAGOG. INST., VORONEZH. USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--CRYSTAL STRUCTURE OF POTASSIUM ALUMINUM ETHYLENEDIAMINETETRAACETATE  
DIHYDRATE -U-  
AUTHOR--POLYNDA, T.N., BELSKAYA, N.P., MARTYNIENKO, I.I., M  
TURKDEGARCIABANUS, D., PORAYKOSHITS, M.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 164-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CRYSTAL STRUCTURE, COMPLEX COMPOUND, POTASSIUM COMPLEX,  
ALUMINUM COMPLEX, X RAY STUDY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/0445 STEP NO--09/0192/70/081/001/0164/0165  
CIRC ACCESSION NO--AP0104058  
UNCLASSIFIED